PT Membrane Crystal 1200
- Pre-applied, active, crystalline waterproofing membrane -

Product description

PT Membrane Crystal 1200 is an absolutely new unique, 3-layer, highly flexible tanking sheet/membrane. The membrane is pre-applied and cold applied, no need of heat and open flames during application, but it can be welded if wanted. It consists of a synthetic membrane which is coated with a pressure sensitive adhesive and treated with crystalline granulate. This special design offers a very high safeness against water penetration. Because of the crystalline properties it is a permanently active waterproofing membrane. Very high bonding to concrete because of crystalline growing into the substrate (concrete) and has self healing properties as well. The PT Membrane Crystal 1200 is trafficable for about 1-3 months, depend on the weather situation. The membrane has a self-adhesive strip on one side for side lap overlapping and ensures a perfect bonding between the membranes. The application must be done before the reinforcement steel is fixed and the concrete is poured.

Area of application

PT Membrane Crystal 1200 is used for the waterproofing of exterior basement walls, foundations, tunnels, floor plates, etc. The same product is suitable for vertical and horizontal areas. PT Membrane Crystal 1200 is usable against pressurized water and infiltration of radon gas.

Properties

- Crystalline active
- Permanently working
- Highly flexible
- Trafficable coating
- Pressure sensitive adhesive
- Continuous thickness
- Watertight against pressurized water
- Chemical resistant
- Methane gas barrier
- Radon gas barrier
- UV-resistant for >60 days
- Highly crack-bridging
- High elongation
- Not harmful for groundwater
- German engineered

Specification

| Base                                      | flexible synthetic membrane |
| Self adhesive coating (1.)                | pressure sensitive polymer resin |
| Active coating (2.)                       | crystalline active coating, mineral based |
| Color                                     | white |
| Processing temperature                    | > + 5°C to +38°C |
| Weight                                    | approx. 1550 g/sqm |
### Basic characteristics

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| Dimensions and deviations | Length: 20 m ± 0.10 m  
Width: 1200 mm ± 5 mm  
Straightness: Passed | EN 1848-2 |
| Thickness and area density | Membrane thickness with coating: 1.27 mm (+10/-5%)  
Area density: 1550 g/m² ± 10% | EN 1849-2 |
| Water tightness | Water pressure 60 kPa (0.6 bar) | EN 1928-A |
| Water tightness | Water pressure 400 kPa (4 bar) | EN 1928-B |
| Resistance to impact | Substrate Al plate | 400 mm | EN 12691-A |
| Resistance to impact | Substrate EPS plate | 800 mm | EN 12691-B |
| Durability – against heat ageing | Passed | EN 1296 and EN 1928-A |
| Durability – against chemicals | Passed | EN 1847 and EN 1928-A |
| Compatibility with bitumen | Passed | EN 1548 and EN 1928-A |
| Tear resistance – longitudinal direction (nail shank) | >500N | EN 12310-1 |
| Tear resistance – transverse direction (nail shank) | >650N | EN 12310-1 |
| Steam permeability | g: 6.97*10 kg/(m²*s) ± 30% | EN 1931-B |
| Resistance to static loading | Substrate: EPS plate | ≤ 15 kg | EN 12730-A |
| Resistance to static loading | Substrate: Concrete | ≤ 20 kg | EN 12730-B |
| Resistance to static loading | Substrate: EPS plate | ≤ 15 kg | EN 12730-C |
| Tensile force in longitudinal direction | ≥ 120 N/6 mm | EN 12311-2 |
| Tensile force in transverse direction | ≥ 140 N/6 mm | EN 12311-2 |
| Tensile strength in longitudinal direction | ≥ 13 N/6 mm | EN 12311-2 |
| Tensile force in transverse direction | ≥ 14 N/6 mm | EN 12311-2 |
| Elongation at rupture – transverse direction | ≥ 650% | EN 12311-2:2013 |
| Elongation at rupture – Longitudinal direction | ≥ 500 % | EN 12311-2:2013 |
| Reaction to fire | Class E | EN 13501-1 |
Technical Data Sheet

Peeling strength of bonding to poured concrete (N/mm²)

- Clean surface: ≥ 2.6
- Contaminated surface with cement powder: ≥ 2.4
- UV aging (3 months): ≥ 2
- Peeling strength of bonding to poured concrete (after being submerged in water) (N/mm): ≥ 2

All technical datas are measured in our laboratory.

Please take notice about the safety information and advice given on the safety data sheets and packaging labels.

Delivery form

PT Membrane Crystal 1200
20 m per roll
Width: 1200 mm
Article-No. 14200024

PT HDPE-Tape 150
20 m per roll
Width: 120 mm
Article-No. 14330150

PT DS-Tape
30 m per roll
Width: 100 mm
Article-No. 14310100

PT REP-Tape
20 m per roll
Width: 100 mm
Article-No. 14320100

Storage

12 months (cool and dry in the original package)

Application

Preparation of the surface
The surface must be sound, even, stable and clean. The substrate to be coated should not have damages, gaps, joints or voids greater than 10 mm. To prevent movements of penetrations such as pipe penetrations for water and electricity during concrete and membrane installation, they have to be fixed and stabilized. Damaged concrete should be renovated with PT Thix Mortar of PT Epoxy Mortar UNI first. Sharp edges have to be removed first.

Material
Technical Data Sheet

**Horizontal application**
PT Membrane Crystal 1200 must be placed with the active crystalline coating upwards and the white layer facing the substrate.

The overlapping between the membranes is 75 mm. Before removing the siliconized PE-foil (of the side lap overlapping area) ensure that the membranes overlapping zone is positioned correctly. Ensure the back side of each subsequent roll is clean prior fixing and overlapping. Then start removing of siliconized PE-foil to bond the membranes together. Use a heavy roller to ensure a complete perfect bonding between the membranes. Then go ahead with removing of plastic film and press membranes together.

At the overlapping area of end laps the PT Membrane Crystal 1200 the PT HDPE-Tape 150 is used. The roll width of the tape is 150 mm. The tape has to be placed 75 mm (150 mm tape) under the first membrane, with the siliconized PE-foil upwards. While removing the first layer of silicone foil the PT Membrane Crystal 1200 must be pressed together. The next membrane has to be placed over the second half of PT HDPE-Tape 150. Proceed with removing of siliconized foil and press the membranes together.

**Vertical application**
PT Membrane Crystal 1200 must be fixed mechanically to the substrate by using fixing tools. These fixings must have a low profile head so that the membrane won’t be damaged from the fixings. The overlapping between the membranes is 80 mm. Before removing the siliconized foil (at the overlapping area) ensure that the membrane overlapping is positioned correctly. Ensure the back side of each subsequent roll is clean prior the overlapping. Then start removing of siliconized foil to bond the membranes together. Use a heavy roller to ensure a complete perfect bonding between the membranes. Then go ahead with removing of siliconized foil and press membranes together.

All detailing for example around pipes should be completed with PT Hydro-Active-Coating 1C extra, a liquid applied membrane. For better bonding to HDPE a preparation with PT REP-Tape 100 is recommended.

**Repairs before concrete placement**
In case of damaging the PT Membrane Crystal 1200 during installation of formwork and reinforcement steel placement it is necessary to repair prior pouring of concrete. PT REP-Tape can be used to repair any cuts or punctures <10 mm. For larger repairs, cut a sleeve out of PT Membrane Crystal 1200 to fit across to repair zone. Ensure that the sleeve overlaps a minimum of 150 mm of damaged area. Repair sleeve must then be sealed with PT DS-Tape 100 as per recommended cut edge detailing.

**Pouring of concrete**
The concrete should be poured within 30 days of PT Membrane Crystal 1200 installation.

Ensure that all overlapping areas are sealed and the siliconized PE-foil is removed in that area.

Do not damage the membrane during pouring of concrete.

**Formwork removal**
It is very important not to remove formwork until the concrete has sufficient compressive strength to develop the required adhesion with PT Membrane Crystal 1200. Too early removal of all formworks can lead to a displacement of PT Membrane Crystal 1200 and or concrete damage. A minimum concrete compressive strength of 10 N/mm² is recommended prior removing formwork.

**Application areas:**
Remarks

The information given in this technical data sheet corresponds to the current state of development and is based on our experience, our knowledge and is non-binding. An investigation has to be done with focus on the respective building project and the area of application. The technical expert advice of proof-tec employees does not exclude the planning or control by an engineer. We are liable within the scope of our general delivery and sales conditions, we are not liable for the application of our materials. The generally accepted rules of technology must be observed. If necessary, preliminary tests have to be carried out.

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All previous versions of this technical data sheet are not valid anymore and should not be used anymore.